REMARKS/ARGUMENTS

Claims 6-9 are present in this application. By this Amendment, the title of the invention, the drawings, and claim 6 have been amended. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

The title of the invention was objected to as not being descriptive. By this Amendment, the title has been amended. If this title does not obviate the objection, Applicant requests that the Examiner suggest a suitable title. Withdrawal of the objection is requested.

Claim "1" was objected to due to the use of "i.e." in line 26. Presumably, the Office Action intended to refer to claim 6. Claim 6 has been amended to delete "i.e." Withdrawal of the objection is requested.

Claims 6-9 were rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,413,309 to Giesler. This rejection is respectfully traversed.

In the invention as defined in claim 6, the primary fluid passage portion (4a) is provided therein with a cylindrical seal member (11) in pressure contact with the ball valve (5) to provide a seal between the ball valve (5) and an inner wall of the socket fluid passage (4). An object of the invention relates to avoidance of damage to the cylindrical seal (11) by the arrangement defined in claim 6. In the Giesler patent, in contrast, the inlet port (123) (primary fluid passage portion) is not provided with any seal member in pressure contact with the ball valve (98) to provide a seal between the ball valve (98) and the inner wall of the socket (101). As such, the Giesler patent is not concerned with the solution of the noted problem that is solved by the invention defined in claim 6.

Moreover, as claimed in claim 6, the ball valve is provided with a sub-valve bore (33) that allows the fluid in the primary fluid passage portion (4a) of the socket fluid passage (4) to be

delivered to a secondary fluid passage portion (4b) of the socket fluid passage through the ball valve (5) before a valve bore (7) of the ball valve opens into the socket fluid passage (4) when the ball valve is rotated. That is, the sub-valve bore (33) connects the primary fluid passage portion (4a) and the secondary fluid passage portion (4b) before the valve bore (7) opens into the socket fluid passage (4).

By this arrangement, before the valve bore (7) of the ball valve opens into the primary fluid passage portion (4a), a differential pressure between the fluid pressure in the primary fluid passage portion (4a) and that in the secondary fluid passage portion (4b) is reduced, and thereby a load applied to the cylindrical seal member (11) on the primary fluid passage side is reduced. Therefore, the ball valve rotating operation, which is carried out thereafter, is facilitated. Also, it is possible to suppress damage to the cylindrical seal member (11), which may otherwise be caused by an opening edge of the valve bore (7) of the ball valve when the valve bore further rotates. As a consequence, durability of the cylindrical seal member (11) can be improved.

In Giesler, however, a vent passage (134) provided in the ball valve (98) extends generally between diametrically opposed sides of the ball valve and effects fluid communication between the outlet port (127) and the vent port (128) when the ball valve is in its closed position. See, for example, column 9, lines 16-29. That is, the vent passage (134) does not connect the inlet port (123) (primary fluid passage portion) and the outlet port (127) (secondary fluid passage portion) despite the position of the ball valve. When the ball valve is closed as shown in Figs. 1-3 of Giesler, since no pressurized fluid exists in the outlet port (127) and the vent port (128) is open to the atmosphere, the vent port (128) has no function of reducing a fluid pressure difference between the inlet port and the outlet port as is effected in the invention defined in claim 6.

Accordingly, the arrangement and the function of the vent passage (128) of Giesler are completely different from those of the sub-valve bore (33) defined in claim 6 of the present application.

Still further, as defined in claim 6, the ball rotating shaft (6) is formed with a purge passage (35) having a purge inlet (35a) that opens into a secondary space formed in the secondary fluid passage portion (4a) between the ball valve (5) and the movable valve (24) and a purge outlet (35b) that opens outside the socket fluid passage (4). In Giesler, however, a vent passage (134) is provided in the ball valve (98) itself. Accordingly, the arrangement of the purge passage defined in claim 6 is substantially different from that of the vent passage (134) in Giesler.

For at least these reasons, Applicant respectfully submits that the rejection of claim 6 is misplaced.

With regard to the dependent claims, Applicant submits that these claims are allowable at least by virtue of their dependency on an allowable independent claim. Moreover, claim 7 defines a pressure balancing member (41) disposed at a side of the ball rotating shaft 6 opposite to a position at which a cylindrical seal member (39) disposed in the fluid recovery passage (36) is in pressure contact with the ball rotating shaft (6). The pressure balancing member (41) is adapted to apply a contact pressure to the ball rotating shaft (6) that balances a contact pressure applied by the cylindrical seal member (39). Accordingly, a bending moment acting on the purge outlet portion (35b) of the ball rotating shaft (6) is theoretically made zero. Thus, it is possible to improve both a rotational operability of the ball rotating shaft (6) and a sealability of the cylindrical seal member (39).

In Giesler, however, no balancing member is disposed at a position opposite to a position at which a cylindrical seal member is disposed. As such, the technical advantages noted above cannot be obtained

Reconsideration and withdrawal of the rejection are respectfully requested.

Figs. 4(B) and 4(C) have been revised to correctly show the extension of the sub-valve bore 33 consistent with that shown in Fig. 4(A).

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims are patentable over the art of record and that the application is in condition for allowance. Should the Examiner believe that anything further is desirable in order to place the application in condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Prompt passage to issuance is earnestly solicited.

Respectfully submitted,

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